# Emission Guide Update for Mobile and Stationary Sources at Air Force Installations

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including suggestions for reducing	ompleting and reviewing the collect this burden, to Washington Headqu uld be aware that notwithstanding ar DMB control number.	arters Services, Directorate for Infor	mation Operations and Reports	, 1215 Jefferson Davis	Highway, Suite 1204, Arlington	
1. REPORT DATE 31 MAR 2011	2. REPORT TYPE		3. DATES COVERED <b>00-00-2011 to 00-00-2011</b>			
4. TITLE AND SUBTITLE				5a. CONTRACT NUMBER		
Emission Guide Update for Mobile and Stationary Sources at Air Force Installations				5b. GRANT NUMBER		
				5c. PROGRAM ELEMENT NUMBER		
6. AUTHOR(S)				5d. PROJECT NUMBER		
				5e. TASK NUMBER		
				5f. WORK UNIT NUMBER		
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) AECOM,555 South Flower Street, Suite 3700,Los Angeles,CA,90071-2300				8. PERFORMING ORGANIZATION REPORT NUMBER		
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)		
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)		
12. DISTRIBUTION/AVAII Approved for publ	LABILITY STATEMENT ic release; distributi	on unlimited				
13. SUPPLEMENTARY NO Presented at the 20 1 Apr, Arlington, V	11 DoD Environme	ntal Monitoring & l	Data Quality Wo	rkshop (EMI	OQ 2011), 28 Mar ?	
14. ABSTRACT						
15. SUBJECT TERMS						
16. SECURITY CLASSIFICATION OF: 17. LIMI				18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON	
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified	Same as Report (SAR)	14	RESTUNSIBLE FERSON	

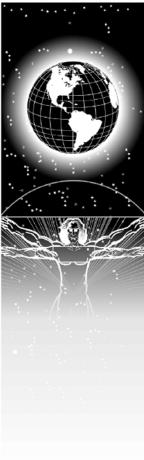
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and

**Report Documentation Page** 

Form Approved OMB No. 0704-0188

#### **Air Force Source Guides**

IERA-RS-BR-SR-2001-0010



## UNITED STATES AIR FORCE IERA

#### Air Emissions Inventory Guidance Document for Mobile Sources at Air Force Installations

(Revised December 2003)

Robert J. O'Brien Mark D. Wade

Karta Technologies, Inc. 5555 Northwest Parkway San Antonio, TX 78249

January 2002

Approved for public release;

distribution is unlimited.

Air Force Institute for Environment, Safety and Occupational Health Risk Analysis Risk Analysis Directorate Environmental Analysis Division 2513 Kennedy Circle Brooks Air Force Base TX 78235-5116 IERA-RS-BR-SR-1999-0001



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### UNITED STATES AIR FORCE IERA

#### Air Emissions Inventory Guidance Document for Stationary Sources at Air Force Installations

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A=COM

#### **Process**

- Combine Sources
- Identify Source Categories
- Review References
- Identify Final Equation
- Update Source Guides
- Create Emissions Database
- Update Software Programs

#### **Combine Sources**

- Air Emissions Inventory Guidance Document for Mobile Sources at Air Force Installations
- Air Emissions Inventory Guidance Document for Stationary Sources at Air Force Installations
- Air Conformity Applicability Model (ACAM)
- Air Program Information Management System (APIMS)

# **Identify Source Categories**

# **54 Stationary Sources**

- Abrasive Blasting
- Fire Fighter Training
- Laboratory Chemicals
- Rocket Engine Testing
- Surface Coatings
- Welding

#### **5 Mobile Sources**

- Aerospace Ground Equipment (AGE)
- Aircraft Operations
- Internal Combustion Sources
- Purchased Power
- Vehicle Emissions

#### **Review References**

- Verify Availability of Each Source Reference for Review
- Research for New References

# **Identify Final Equation**

- Review the Multiple Equations and Determine Which One(s) is the Most Appropriate
- Determine Equation Basis
  - Emission Factors
  - Material Balances
  - Both

#### **Emission Factors**

$$E = EF \times C \times (1 - ER/100)$$

- E = emissions
- EF = emission factor
- C = consumption
- ER = overall emission reduction efficiency of control device (%)
   (ER = 0 if no control device is used)

#### **Material Balance**

- $E = (C WM) \times (1 ER/100)$
- $E = \Sigma E_{\text{HAPi}} + \Sigma E_{\text{non-HAPi}}$
- $E_{HAP} = E \times F_{HAP}$ 
  - E = emissions
  - C = consumption
  - WM = waste material
  - ER = overall emission reduction efficiency of control device (%)
     (ER = 0 if no control device is used)
  - E<sub>HAPi</sub> = emissions for a specific HAP
  - E<sub>non-HAPi</sub> = emissions for a specific pollutant that is not a HAP
  - F<sub>HAP</sub> = fraction (%) of total emissions attributed to a specific HAP

# **Update Source Guides**

- Update the Equations in the Two Source Guides as Necessary
- Update any Needed Text and Example Problems
- Update the Reference List to Include only the References Actually Utilized
- Remove Any Emission Factors

#### **Create Emissions Database**

- Emission Factors
  - Criteria Pollutants
  - Hazardous Air Pollutants (HAPs)
  - Greenhouse Gases (GHG)
- Each Emission Factor Will Include:
  - Source Category
  - Equation
  - Description
  - Reference

# **Update Software Programs**

- ACAM and APIMS
  - New Source Categories
  - Equations
  - Emission Factors
- Program Correlations
  - Air Force Guides and Database
    - ✓ Source Categories
    - ✓ Methodologies
    - ✓ Emission Factors
    - √ Reporting Format

# **Reports**

- Air Emissions Inventory (AEI) AFCEE Format
- Two Tables
  - Criteria Pollutant Emissions
    - ✓ Listed by Source Category, Tons/Yr and Percent of the Total Emissions
  - HAP Emissions
    - ✓ Listed by Source Category, Individual and Total HAPs, Lbs/Yr and Tons/Yr

# Thank You

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